

What is claimed is:

1. A vector comprising a promoter linked to a heterologous coding sequence to express said coding sequence in tubular gland cells of an avian oviduct.

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2. The vector of claim 1, wherein said promoter is selected from the group consisting of ovomucoid, ovalbumin, lysozyme, conalbumin, or ovomucin promoters.

3. The vector of claim 2, wherein the promoter is an ovomucoid promoter.

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4. The vector of claim 2, wherein the promoter is an ovalbumin promoter.

5. The vector of claim 2, wherein the promoter is a lysozyme promoter.

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6. The vector of claim 1, wherein said promoter is a constitutive promoter.

7. The vector of claim 6, wherein said constitutive promoter is a CMV promoter

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8. The vector of claim 1, further comprising a signal peptide coding sequence which is linked to said coding sequence, so that upon translation in a cell, the signal peptide will direct secretion of the protein expressed by the vector.

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9. The vector of claim 1, further comprising a marker gene, wherein said marker gene is linked to a constitutive promoter selected from the group consisting of the *Xenopus laevis ef-1 α* promoter, the *HSV tk* promoter, the CMV promoter, and the β -actin promoter.

10. The vector of claim 1, further comprising an internal ribosome entry site element.

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11. A transgenic bird having a transgene in the genetic material of its germ-line tissue, wherein the transgene comprises an exogenous gene and a promoter, in operational and positional relationship to express said exogenous gene, and said exogenous gene is expressed in tubular gland cells of an avian oviduct of the transgenic bird.

12. The transgenic bird of claim 11, wherein said promoter is selected from the group consisting of ovomucoid, ovalbumin, lysozyme, conalbumin, or ovomucin promoters.

13. The transgenic bird of claim 11, wherein said promoter is a constitutive promoter.

14. The transgenic bird of claim 11, wherein the transgenic bird is selected from the group consisting of chickens and turkeys.

15. A cell, wherein said cell is transformed with a vector of claim 1 and wherein said cell expresses an exogenous protein.

16. The cell of claim 15, wherein said cell is a tubular gland cell.

17. The cell of claim 15, wherein said exogenous protein is selected from the group consisting of human growth hormone, interferon, erythropoietin, immunotoxins and antibodies.

18. The cell of claim 15, wherein said cell is in an oviduct of a genetically modified avian.

19. The cell of claim 15, wherein said cell is in an oviduct of a transgenic avian.

20. An egg of an avian species containing protein exogenous to the avian species.

21. The egg of claim 20, wherein said protein is selected from the group consisting
5 of human growth hormone, interferon, erythropoietin, immunotoxins and antibodies.

22. A method for the stable introduction of an exogenous coding sequence into the genome of an avian, comprising:

introducing the vector of claim 1 into avian embryonic cells, wherein the vector
10 is randomly inserted into the avian genome.

23. The method of claim 22, wherein the embryonic cells are selected from the group consisting of embryonic germ cells (EG), embryonic stem cells (ES), and
15 primordial germ cells (PGC).

24. A method for producing an exogenous protein in an avian oviduct, comprising:
providing a vector that comprises a coding sequence and a promoter linked to
said coding sequence, wherein said promoter can effect expression of the coding
sequence in tubular gland cells of an avian oviduct;

20 creating transgenic cells by introducing said vector into avian embryonic cells,
wherein the vector is randomly inserted into an avian genome; and

deriving a mature transgenic avian from said transgenic cells, wherein said
tubular gland cells of the transgenic avian express the protein.

25 25. The method of claim 24, wherein said promoter is selected from the group
consisting of ovomucoid, ovalbumin, lysozyme, conalbumin, or ovomucin promoters.

26. The method of claim 24, wherein said promoter is a constitutive promoter.

27. A method for producing an avian egg which contains exogenous protein, comprising:

providing a vector that comprises a coding sequence and a promoter linked to said coding sequence, wherein said promoter can effect expression of the coding

5 sequence in tubular gland cells of an avian oviduct;

creating transgenic cells by introducing said vector into avian embryonic cells, wherein the vector is randomly inserted into an avian genome; and

deriving a mature transgenic avian from said transgenic cells, wherein the tubular gland cells of the transgenic avian express the coding sequence, and the

10 resulting exogenous protein is secreted into the oviduct lumen, so that the protein is deposited into the egg white of an egg.